

Axillary Lymph Node Metastasis from Ovarian Cancer in a Patient with a Personal History of Breast Cancer: A Case Report

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Ovarian cancer presenting as axillary lymph node metastasis is extremely rare, especially in cases where the breast is not involved.

We report a case of ovarian carcinoma initially presenting as contralateral axillary lymphadenopathy with associated breast skin thickening in a patient who had underwent left-sided mastectomy for breast cancer.

A 66-year-old woman with a history of left modified radical mastectomy 13 years ago, had right axillary lymphadenopathy with localized skin thickening of the right breast on follow-up mammography and ultrasound. Abdomen-pelvis CT on the same day demonstrated peritoneal masses. Finally, ultrasound-guided biopsy of the axillary lymph node revealed high-grade serous carcinoma of ovarian origin.

In the case of rare spreading patterns, axillary metastasis of other malignancy excluding breast cancer must be considered with active evaluation.

Index words: Breast cancer; Ovarian cancer; Axillary lymph node metastasis; Ultrasound-guided core needle biopsy

Introduction

Ovarian carcinoma is usually confined peritoneal cavity. Extra-peritoneal metastasis at initial presentation is rare. Metastasis to axillary lymph nodes from ovarian carcinoma is very rare and is usually present with breast metastasis. However,

isolated axillary lymph node metastases without breast involvement have been detected (1).

We report a case of metastatic ovarian cancer presenting as axillary lymph node metastasis and breast skin thickening in a patient with a personal history of breast cancer.

Case

A 66-year-old woman with a history of left sided breast cancer treated with mastectomy 13 year ago, underwent screening mammography and breast ultrasound. Mammography showed an enlarged

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lymph node with fatty hilum and thickened cortex in right axilla and right breast skin thickening (Fig. 1a). Breast ultrasound revealed a 1.8 cm lymph node with eccentric cortical thickening over 3 mm and preserved fatty hilum in right axilla (Fig. 1b). It was categorized as BI-RADs category 4A because of the history of breast cancer.

Abdominal and pelvic CT was also performed on the same day due to the patient's HBV carrier status, which demonstrated multiple peritoneal seeding masses and enlarged lymph nodes in abdomen without ovarian abnormality (Fig. 1c).

However, breast surgeon wanted to confirm the pathology of peritoneal mass, as it was unusual

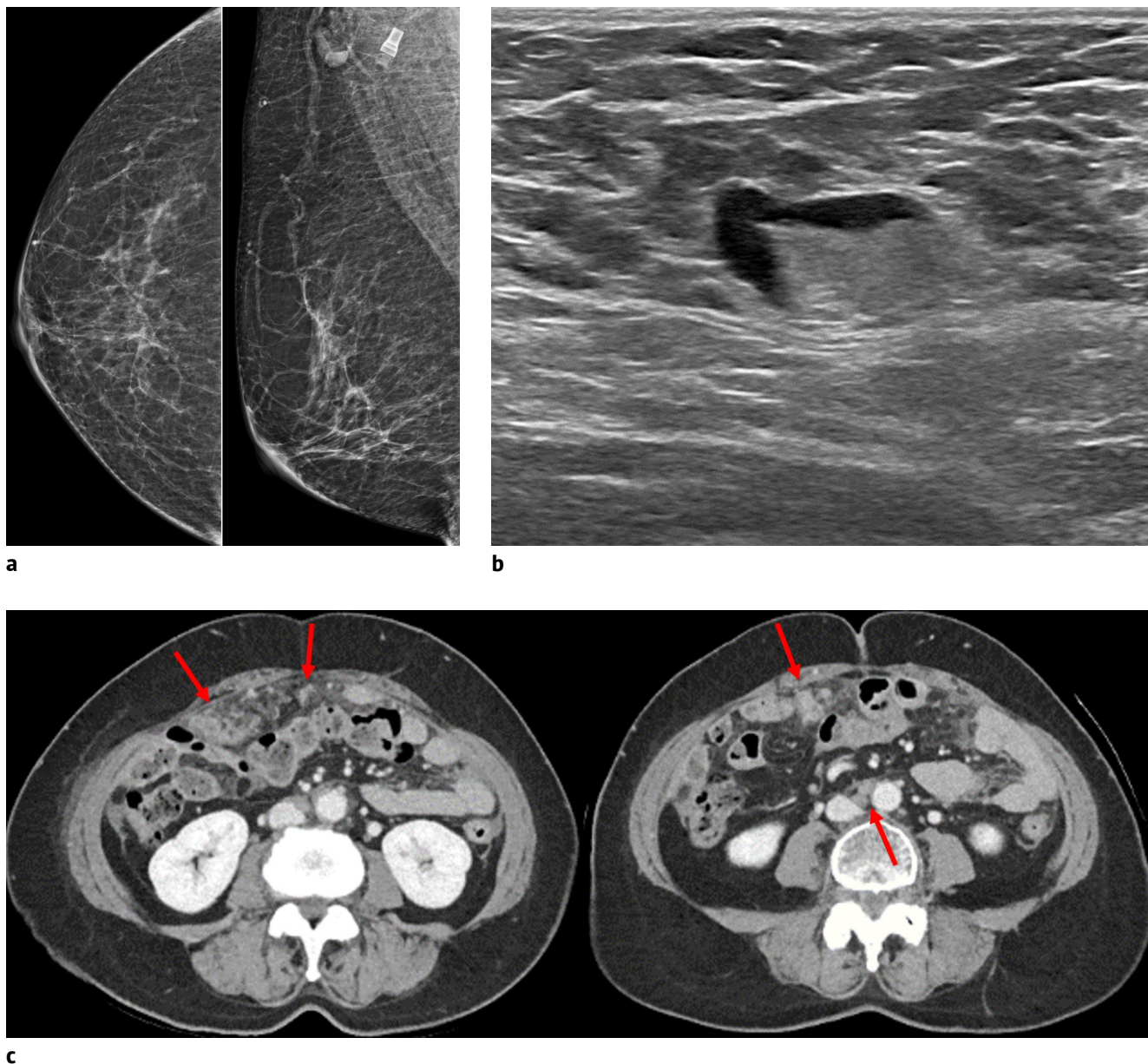
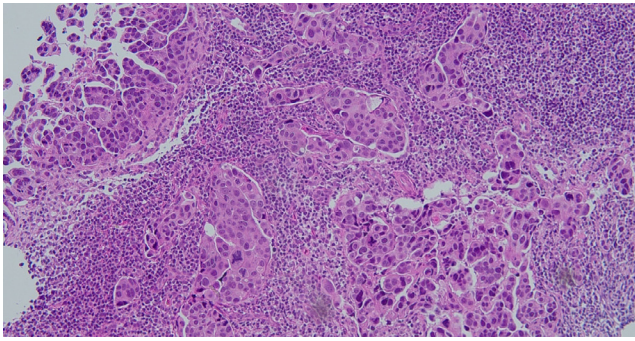


Fig. 1. 67-year-old woman with a history of left modified radical mastectomy diagnosed right axillary node metastasis of ovarian cancer. (a) Right breast CC and MLO view of mammography show a hyperdense enlarged lymph node in right axilla and mild skin thickening of right breast. (b) Breast ultrasound shows a 1.8cm enlarged lymph node with eccentric cortical thickening over 3mm and preserved fatty hilum in right axilla. (c) Venous phase image of abdominal pelvic CT shows multiple masses (arrows) in greater omentum, mesentery and para-aortic area.

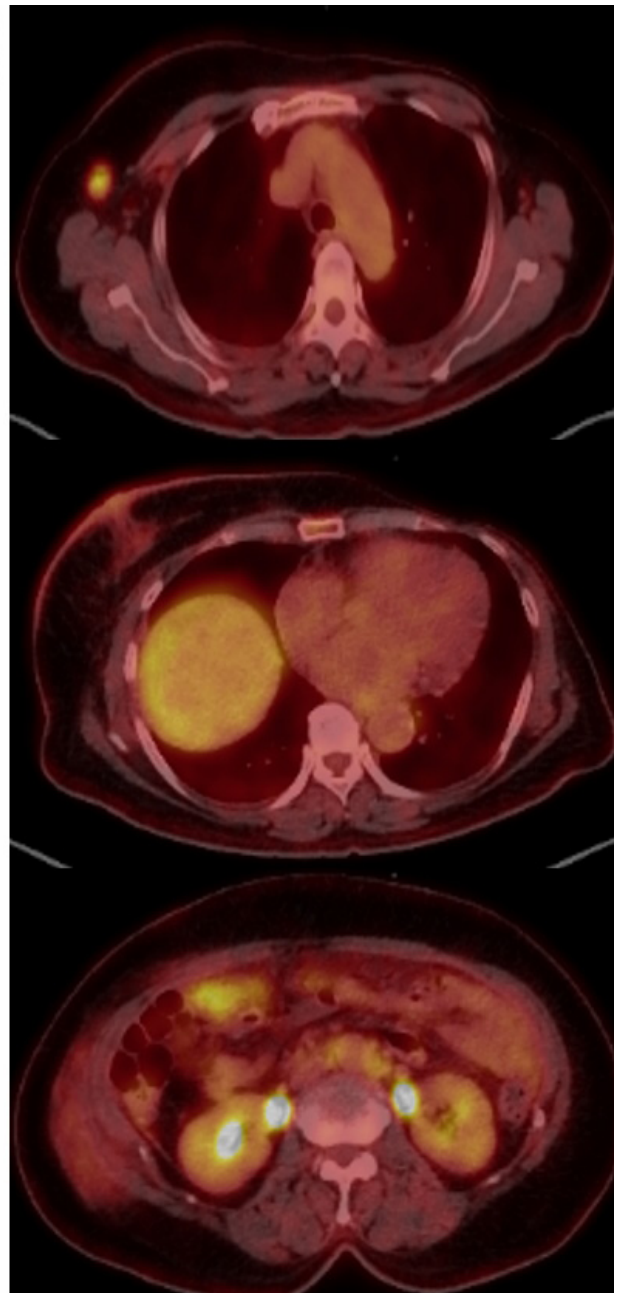


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Fig. 1. (d) Photomicrograph of right axillary lymph node shows abnormal papillary structures demonstrating serous papillary carcinoma (H&E, x20). (e) Maximum intensity projection (MIP) and axial CT image of 18F-FDG PET-CT show hypermetabolic lymph node in right axilla, mild hypermetabolic skin thickening and multiple hypermetabolic lesions in abdomen.



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to spread peritoneum skipping common site of breast cancer metastasis such as bone, lung or liver (2). Considering patient convenience, US-guided core needle biopsy for the axillary lymph node was performed rather than laparoscopic surgery. Biopsy of axillary lymph node revealed metastatic carcinoma. On immunohistochemistry, tumor cells were positive for WT-1, PAX-8 and negative for GATA-3. The pathology report concluded the lymph node was consistent with metastasis of female genital tract origin carcinoma (serous carcinoma) (Fig. 1d).

For the further evaluation, 18F-fluorodeoxyglucose (18F-FDG) positron emission tomography CT (PET CT) scan was performed. There were hypermetabolic omental haziness in perihepatic area hypermetabolic mass in rectovaginal pouch, and multiple hypermetabolic lymph nodes along the left paraaortic, aortocaval, both common to external iliac, and both inguinal area. PET CT also demonstrated multiple hypermetabolic lymph nodes at right axilla, and mid hypermetabolic skin thickening without focal lesion in right breast (Fig. 1e). Serum CA-125 was elevated to 1143.0U/mL and carcinoembryonic antigen level was 1.0ng/ml.

Finally, neoadjuvant chemotherapy before debulking operation was planned with a presumptive diagnosis of ovarian cancer stage IV.

Discussion

It can be difficult to differentiate between benign and malignant lymph nodes on imaging in the early stages of metastasis. Although cortical thickening greater than 3 mm or eccentric cortical thickening is one of the criteria to distinguish between benign and malignant lymph node, it is not always possible to differentiate (3). In our case, the most suspicious finding was that it looked worse than in the previous mammography or ultrasound.

Peritoneal metastasis from breast cancer is rare, and usually occurs during a progression event. And

the previous studies demonstrated that breast cancer peritoneal metastasis mainly associated with invasive lobular carcinoma (2). In this case, the primary tumor was invasive ductal carcinoma and the locoregional recurrence was not found. Core needle biopsy of the right axillary lymph node seemed more appropriate than fine needle biopsy for precise pathologic diagnosis (4).

Metastasis of ovarian cancer to the breast and/or axillary lymph node is rare. The main radiologic patterns of breast involvement are masses and architecture distortion. In up to 67% of these cases axillary node involvement is also noted. However, isolated axillary lymph node metastasis without breast involvement has been reported (1). In this case, ovarian cancer was diagnosed with axillary lymph node core needle biopsy rather than invasive laparoscopic surgery.

Skin metastasis of ovarian cancer is also rare (5). Some cases demonstrated pilomatricoma-like and cauliflower-type variants. There was a case with cutaneous carcinomatous lymphangitis from ovarian carcinoma on bilateral thigh (6). There was a case report of a woman with skin thickening of breast, which was revealed as the carcinomatous lymphangitis by cutaneous biopsy (7). Our patient also has mild skin thickening around nipple areolar complex, which seems to be breast carcinomatous lymphangitis.

In conclusion, when axillary lymph node enlargement presented with unusual spreading pattern in a breast cancer patient, a more aggressive diagnostic approach, including core needle biopsy, is needed to identify potential primary malignancy other than breast cancer.

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유방암으로 변형 근치적 유방 절제술을 시행 받은 환자에서 액와부림프절 전이로 발견된 난소암의 증례

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액와부림프절 전이로 나타나는 난소암은 매우 드물고 유방을 포함하지 않은 액와부림프절 전이되는 경우는 더욱 드물다. 저자들은 유방암으로 변형 근치적 유방 절제술을 시행 받은 환자에서 반대측 유방피부두께 증가와 액와부림프절 전이로 나타난 난소암 증례를 영상소견과 함께 보고하고자 한다.

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